

Appl. No. 10/581,415
Amdt. dated August 9, 2010
Reply to Final Office action of May 10, 2010

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-9. (Canceled)

10. (Currently amended) **A high-pressure fuel pump having** ~~[[In]]~~ an inlet valve assembly ~~of a high-pressure fuel pump~~ comprising a valve element disposed in a valve chamber **of the high-pressure fuel pump** and a fluid conduit adjoining the valve chamber on the upstream side, the valve element alternatively opening and closing the fluid conduit on the upstream side of the valve chamber, the improvement wherein the fluid conduit has a substantially constant width and is embodied such that a swirl-type rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced by the conduit in the production of the swirl-type rotation of the fluid, so that the swirl-type rotation of the fluid results in improved efficiency of the valve assembly and less wear of the valve element.

11. (Currently amended) **A high-pressure fuel pump** ~~The valve assembly~~ as recited in claim 10, wherein the fluid conduit comprises a first conduit portion and a second conduit portion adjoining the first conduit portion, the longitudinal axes of the first and second

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conduit portions being at an angle $< 180^\circ$ to one another, and the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion.

12. (Currently amended) In an inlet valve assembly of a high-pressure fuel pump comprising a valve element disposed in a valve chamber and a fluid conduit adjoining the valve chamber on the upstream side, the valve element alternatively opening and closing the fluid conduit on the upstream side of the valve chamber, the improvement wherein the fluid conduit has a substantially constant width and is embodied such that a swirl-type rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced by the conduit in the production of the swirl-type rotation of the fluid, so that the swirl-type rotation of the fluid results in improved efficiency of the valve assembly and less wear of the valve element, wherein the fluid conduit comprises a first conduit portion and a second conduit portion adjoining the first conduit portion, the longitudinal axes of the first and second conduit portions being at an angle $< 180^\circ$ to one another, and the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion, and ~~The valve assembly as recited in claim 11,~~ wherein the longitudinal axes of the first and second conduit portions are at least approximately at a right angle to one another.

13. (Currently amended) A high-pressure fuel pump ~~The valve assembly as recited in claim 10,~~ further comprising a ball as the valve element.

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14. **(Currently amended)** **A high-pressure fuel pump** ~~The valve assembly~~ as recited in claim 11, further comprising a ball as the valve element.

15. **(Previously presented)** The valve assembly as recited in claim 12, further comprising a ball as the valve element.

16. **(Currently amended)** **A high-pressure fuel pump** ~~The valve assembly~~ as recited in claim 11, wherein the first and second conduit portions, in cross section, have at least approximately the same radius; and wherein the lateral offset of the longitudinal axes is greater than the radius.

17. **(Previously presented)** The valve assembly as recited in claim 12, wherein the first and second conduit portions, in cross section, have at least approximately the same radius; and wherein the lateral offset of the longitudinal axes is greater than the radius.

18. **(Currently amended)** **A high-pressure fuel pump** ~~The valve assembly~~ as recited in claim 14, wherein the first and second conduit portions, in cross section, have at least approximately the same radius; and wherein the lateral offset of the longitudinal axes is greater than the radius.

19. **(Currently amended)** **A high-pressure fuel pump** ~~The valve assembly~~ as recited in claim 11, further comprising a transition region between the first conduit portion and the

second conduit portion, the transition region being machined by means of electrochemical removal of material.

20. **(Previously presented)** The valve assembly as recited in claim 12, further comprising a transition region between the first conduit portion and the second conduit portion, the transition region being machined by means of electrochemical removal of material.

21. **(Currently amended)** A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 14, further comprising a transition region between the first conduit portion and the second conduit portion, the transition region being machined by means of electrochemical removal of material.

22. **(Currently amended)** A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 16, further comprising a transition region between the first conduit portion and the second conduit portion, the transition region being machined by means of electrochemical removal of material.

23. **(Currently amended)** A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 19, wherein the transition region comprises a wall that is curved from the first conduit portion to the second conduit portion.

24. **(Previously presented)** The valve assembly as recited in claim 20, wherein the transition region comprises a wall that is curved from the first conduit portion to the second conduit portion.

25. **(Currently amended)** A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 21, wherein the transition region comprises a wall that is curved from the first conduit portion to the second conduit portion.

26. **(Currently amended)** A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 22, wherein the transition region comprises a wall that is curved from the first conduit portion to the second conduit portion.

27. **(Currently amended)** In an inlet valve assembly of a high-pressure fuel pump comprising a valve element disposed in a valve chamber and a fluid conduit adjoining the valve chamber on the upstream side, the valve element alternatively opening and closing the fluid conduit on the upstream side of the valve chamber, the improvement wherein the fluid conduit has a substantially constant width and is embodied such that a swirl-type rotation about the longitudinal axis of the fluid conduit is impressed on the fluid stream that flows toward the valve chamber, without a constriction of this fluid stream being produced by the conduit in the production of the swirl-type rotation of the fluid, so that the swirl-type rotation of the fluid results in improved efficiency of the valve assembly and less wear of the valve element, and wherein the fluid conduit

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comprises a first conduit portion and a second conduit portion adjoining the first conduit portion, the longitudinal axes of the first and second conduit portions being at an angle $< 180^\circ$ to one another, with the longitudinal axis of the first conduit portion being laterally offset from the longitudinal axis of the second conduit portion, and ~~The valve assembly as recited in claim 11,~~ wherein the first conduit portion extends no more than a very small distance past the second conduit portion.

28. (Currently amended) A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 14, wherein the first conduit portion and the second conduit portion form an angle $> 90^\circ$.

29. (Currently amended) A high-pressure fuel pump ~~The valve assembly~~ as recited in claim 11, wherein the first conduit portion and the second conduit portion form an angle $> 90^\circ$.